What's happening at Institute in the Park

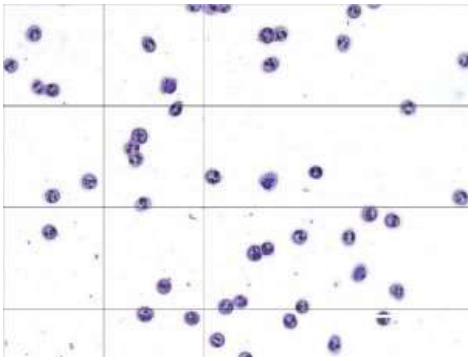
We were thrilled in October 2016 to make a grant to the Institute in the Park in Liverpool to purchase the Evo cell imaging system to aid important research into childhood diseases. We asked Dr Angela Midgley who is leading this important work with Dr Brian Flanagan to tell us how their research was going. This is what she had to say:

"In Sept 2015 we moved into our new research laboratory in the Institute in the Park at the University of Liverpool to continue our research into childhood diseases. We are based next door to Alder Hey children's hospital which enables us to connect directly with the patients and obtain fresh samples daily.

Our areas of interest involve mainly asthma and respiratory diseases, autoimmune diseases particularly Juvenile lupus and the development of kidney disease known as lupus nephritis and childhood leukaemia.
The facilities within our new labs are obviously essential to the progression of our studies and we are very grateful to the Parry Family Charitable Foundation for funding the EVOS cell imaging system.

The inverted microscopes enables us to look at growing live cells without damaging them and to follow what they are doing over a period of time by taking regular photographs. As well as being used in the day-to-day checking of cells to monitor a child's condition, this imaging system will also enable us to carry out longitudinal studies to better understand specific conditions where cell changes occur.

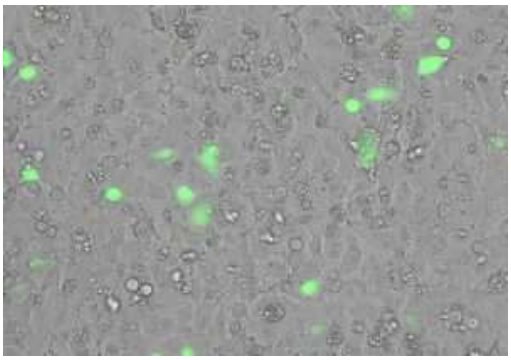
The EVOS system uses a computer display screen to enable more than one person to look at the image at the same time, this has really aided our discussions with colleagues. It has also really helped when teaching students about the different cell types we are isolating. In the past it has been difficult to fully explain what we are wanting to observe when looking down an eye piece however being able to look at the screen together has made sure that our students know what to look for.



This image taken on the EVOS system shows neutrophils, an important abundant cell of our immune system. Part of our daily analysis will involve counting the number of cells we have isolated. The clear images produced not only tells us the status of the cells (unhappy and dying cells change in shape and size) but the ability to add a grid makes counting the cells easier which is a very welcomed tool in a job that can often feel laborious but is essential.

Part of the EVO system allows us to observed cells and other substances which we have stained with different colours. This has already provided information on our work looking at a virus called RSV. We are wanting to know how the lung protects its self from RSV- a major cause of infection which can lead to young children needing to be admitted to hospital. Using this system we can for the first time see where the virus is growing and which living cells are infected

This image taken on the EVOS system shows a layer of growing cells like those found in the lung. The green cells are those containing virus. I was thrilled when I saw this, being able to take these types of images will help our research enormously. It's these green cells we want to know more about.



The system has only been up and running for a couple of months but we are all very excited about the preliminary data we are obtaining and the experiments it will enable us to carry out. We look forward to how it will enhance the experience of visitors to the lab when we can show our results on a big screen! and the observations we can carry out on live cells over time. We can also add other colours to those green cells to distinguish the exact locations in the cells that the virus is effecting. If we see red and green together, at this point we may all be dancing around the labs!"

We will update you on progress and we will be returning to the Institute in the Park to talk to Brian and Angela about what could be the next steps in supporting their work.